Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for producing a plurality of semiconductor chips [[(20)]], particularly radiation-emitting semiconductor chips, each having at least one epitaxially produced functional semiconductor layer stack[[(51)]], comprising the following method steps:

- preparing a growth substrate wafer[[(1)]] substantially comprised of semiconductor material from a semiconductor material system that is in terms of lattice parameters the same as or similar to that on which a semiconductor layer sequence[[(5)]] for the functional semiconductor layer stack[[(51)]] is based,
- forming in said growth substrate wafer[[(1)]] a separation zone[[(4)]] disposed parallel to a main face[[(100)]] of said growth substrate wafer[[(1)]],
- joining said growth substrate wafer (1) to an auxiliary carrier wafer[[(2]],
- detaching along said separation zone (4) a portion[[(11)]] of said growth substrate wafer[[(1)]] that faces away from said auxiliary carrier wafer[[(2)]] as viewed from said separation zone[[(4)]],
- forming on the portion[[(12)]] of said growth substrate wafer remaining on said auxiliary carrier wafer[[(2)]] a growth surface[[(121)]] for subsequent epitaxial growth of a semiconductor layer sequence[[(5)]],
- epitaxially growing said semiconductor layer sequence[[(5)]] on said growth surface[[(121)]],
- applying a chip substrate wafer[[(7)]] to said semiconductor layer sequence[[(5)]],
- detaching said auxiliary carrier wafer[[(2)]], and
- singulating the composite composed of said semiconductor layer sequence[[(5)]] and said chip substrate wafer[[(7)]] into mutually separate semiconductor chips[[(20)]].

2. (Currently Amended) The method according to claim 1, wherein prior to the application of said chip substrate wafer[[(7)]], said semiconductor layer sequence[[(5)]] is structured into a plurality of epitaxial semiconductor layer stacks[[(51)]] disposed side by side on said auxiliary carrier wafer[[(2)]].

3. (Currently Amended) The method according to claim 2, wherein at least sidewalls of said epitaxial semiconductor layer stack[[(51)]] are provided at least partially with passivating material[[(9)]].

4. (Currently Amended) The method according to ~~at least one of claims 1 to 3~~ claim 1, wherein prior to the application of said chip substrate wafer[[(7)]], said epitaxial semiconductor layer sequence[[(5)]] is provided with an electrical contact layer[[(6)]].

5. (Currently Amended) The method according to ~~at least one of claims 1 to 4~~ claim 1, wherein said separation zone[[(4)]] is produced by ion implantation.

6. (Original) The method according to claim 5, wherein hydrogen is implanted.

7. (Currently Amended) The method according to ~~at least one of claims 1 to 6~~ claim 1, wherein the portion[[(11)]] of said growth substrate wafer[[(1)]] facing away from said auxiliary carrier wafer[[(2)]] as viewed from said separation zone[[(4)]] is thermally cleaved along said separation zone[[(4)]].

8. (Currently Amended) The method according to ~~at least one of claims 1 to 7~~ claim 1, wherein said auxiliary carrier wafer[[(2)]] is transparent to electromagnetic radiation with wavelengths below 360 nm.

9. (Currently Amended) The method according to ~~at least one of claims 1 to 8~~ claim 1, wherein said auxiliary carrier wafer is transparent to high-energy electromagnetic radiation, particularly laser radiation.

10. (Currently Amended) The method according to claim 9, wherein said auxiliary carrier wafer[[(2)]] is detached from said semiconductor layer sequence[[(5)]] or from said semiconductor layer stack[[(51)]] by a laser liftoff process.

11. (Currently Amended) The method according to ~~at least one of claims 1 to 10~~ claim 1, wherein said auxiliary carrier wafer[[(2)]] is matched in terms of thermal expansion coefficient to said growth substrate wafer[[(1)]].

12. (Currently Amended) The method according to ~~at least one of claims 1 to 11~~ claim 1, wherein said auxiliary carrier wafer (2) is polycrystalline.

13. (Currently Amended) The method according to ~~at least one of claims 1 to 12~~ claim 1, wherein the joint between said growth substrate wafer[[(1)]] and said auxiliary carrier wafer[[(2)]] is produced by means of silicon oxide.

14. (Currently Amended) The method according to at ~~least one of claims 1 to 13~~ claim 1, wherein said semiconductor layer sequence[[(5)]] includes at least one semiconductor layer based on GaN and the material of said growth substrate wafer[[(1)]] is also based on GaN.

15. (Currently Amended) The method according to claim 14, wherein said auxiliary carrier wafer[[(2)]] is composed of sapphire and/or AlN.

16. (Currently Amended) The method according to ~~at least one of claims 1 to 15~~

claim 1, wherein said growth surface[[(121)]] is prepared for the epitaxial growth of said semiconductor layer sequence[[(5)]] by etching and/or grinding.